



Center on the Developing Child
HARVARD UNIVERSITY

Leveraging 21st Century Science to Reduce Toxic Stress and Build the Foundations of Resilience in Early Childhood

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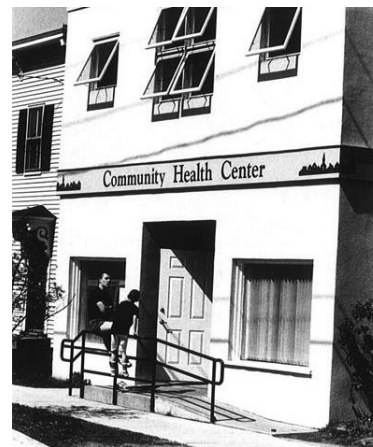
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AAP Symposium on Child Health, Resilience, and Toxic Stress
Washington, DC | June 17, 2014

Capitalizing on an Extraordinary Revolution in Biology

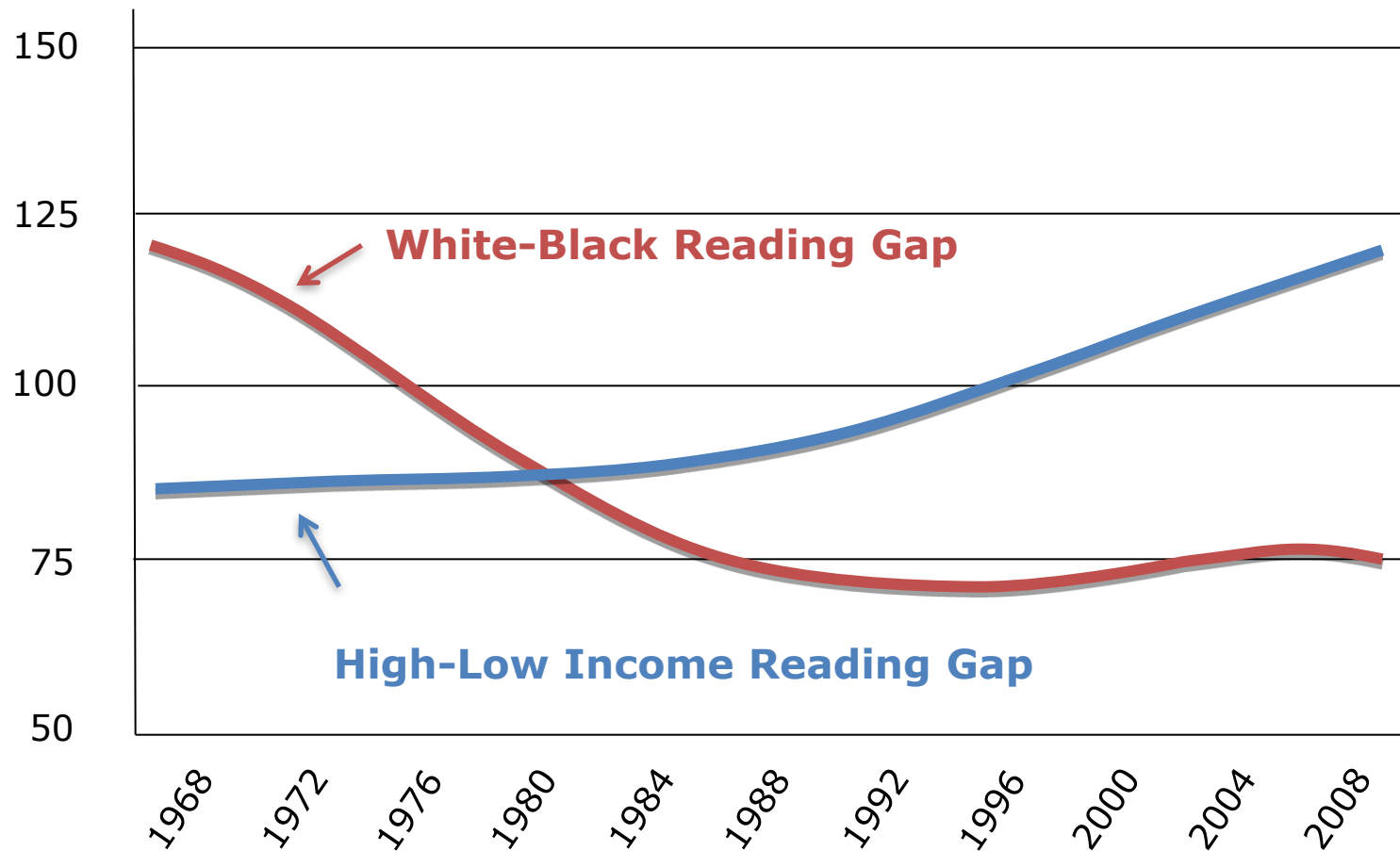
Advances in neuroscience, molecular biology, and epigenetics provide an unprecedented opportunity to catalyze the design and testing of new strategies across multiple sectors to strengthen the foundations of lifelong learning, behavior, and health.

How Can Advances in Science Build on Lessons Learned from a 50-Year War on Poverty



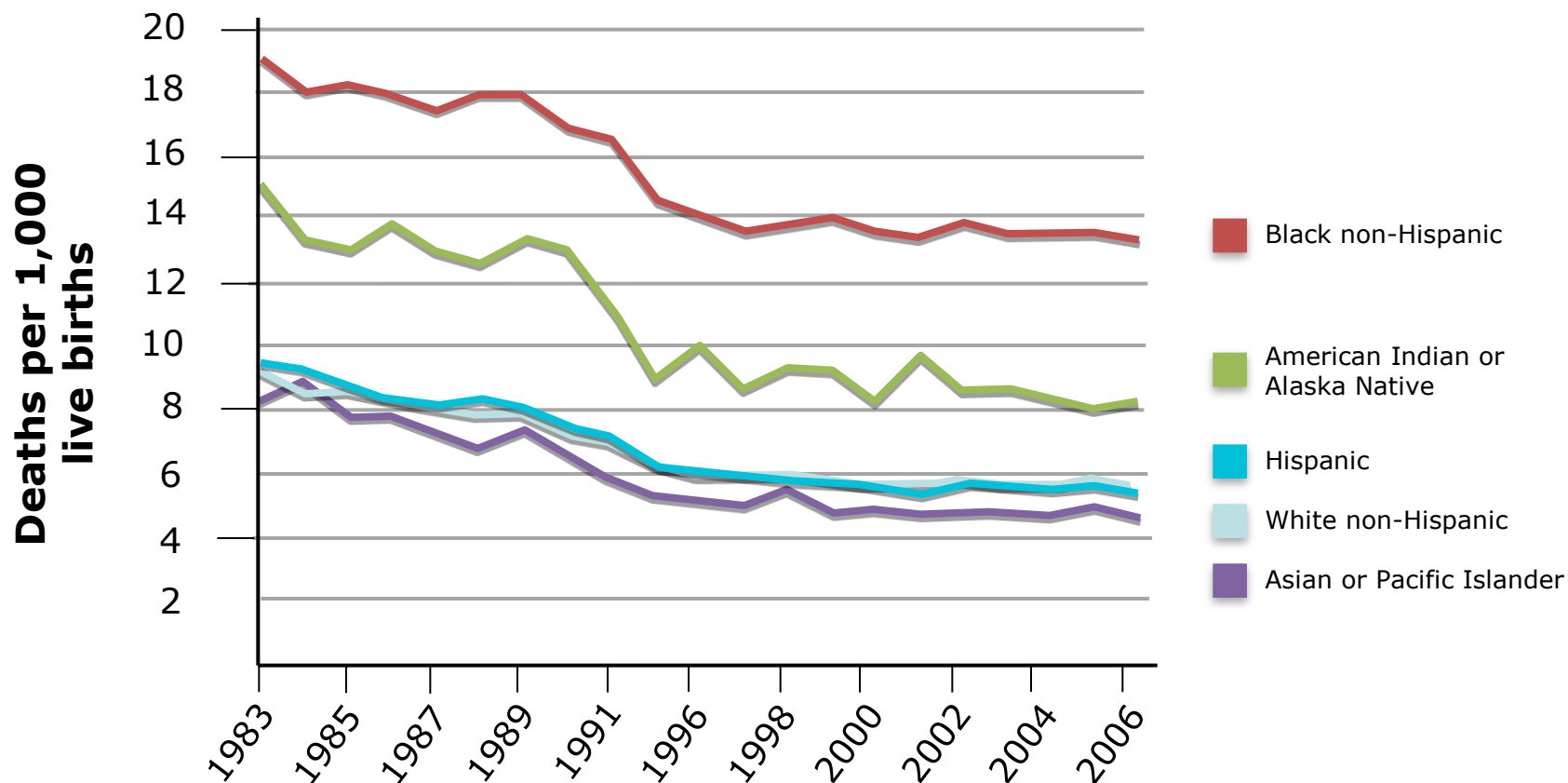
Racial Gaps in Reading Scores Have Decreased But Disparities By Family Income Have Grown

Points on
SAT-type scale



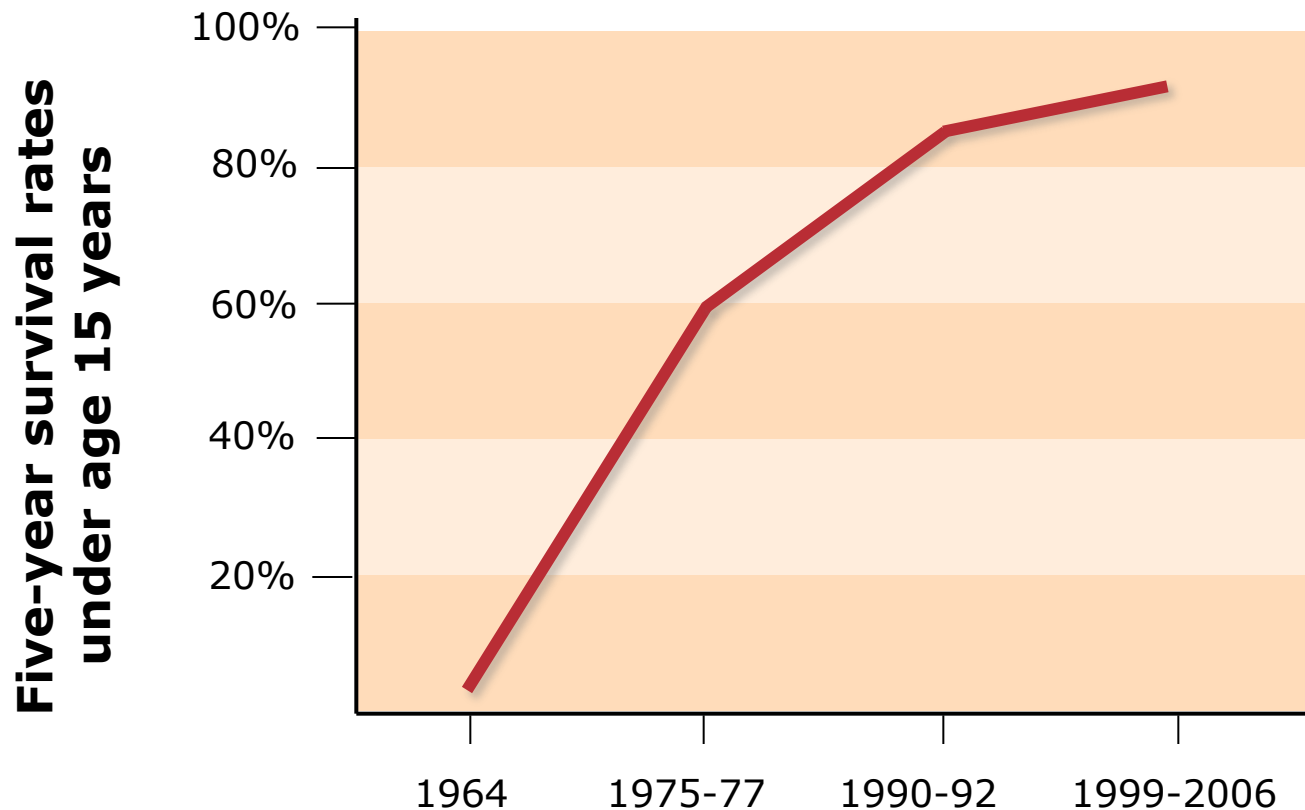
Source: Reardon (2011)

Infant Mortality Has Decreased But Racial and Ethnic Disparities Remain a Significant Problem



Source: National Center for Health Statistics, America's Children: Key National Indicators of Well-Being (2011)

Dramatic Progress in Treating Acute Lymphocytic Leukemia Provides Important Lessons for Achieving Breakthrough Impacts



Source: Hunger, Lu, Devidas (2012)

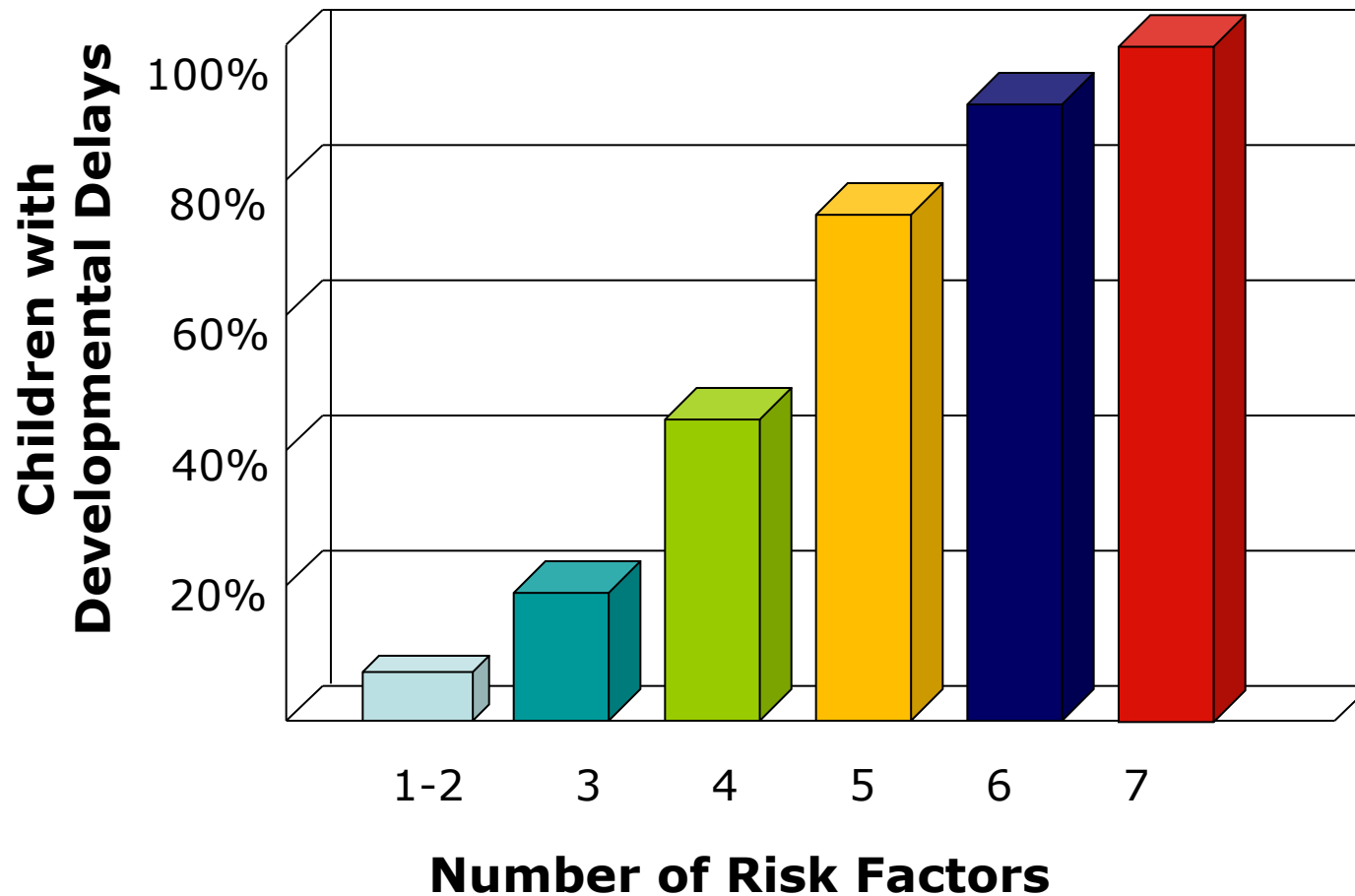
Genes and Experiences Interact to Build Brain Architecture



Watch this video:

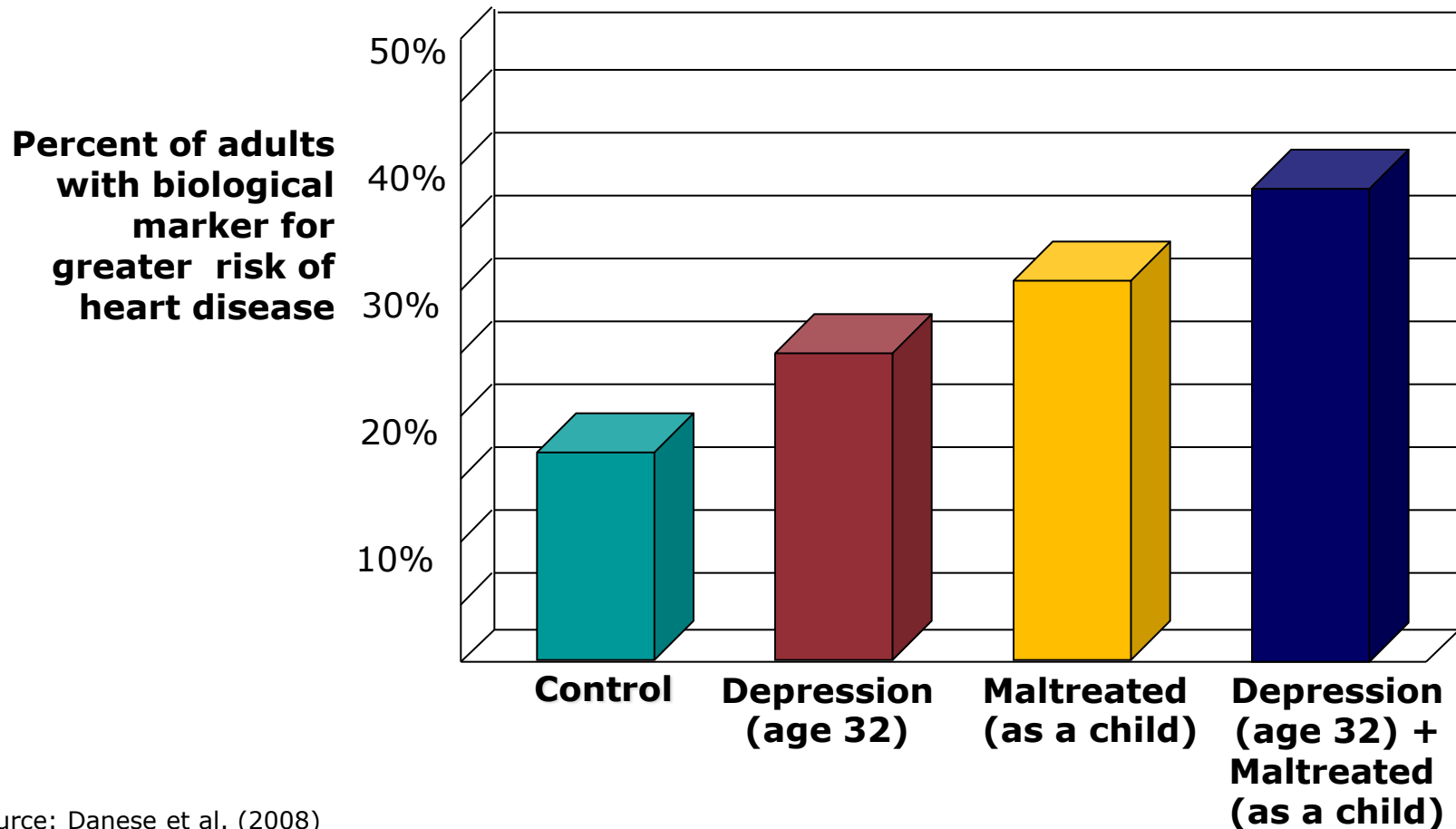
http://developingchild.harvard.edu/resources/multimedia/videos/three_core_concepts/brain_architecture/

The Cumulative Pile Up of Adversity Impairs Development in the First Three Years



Source: Barth, et al. (2008)

Biological “Memories” Link Maltreatment in Childhood to Greater Risk of Adult Heart Disease



Source: Danese et al. (2008)

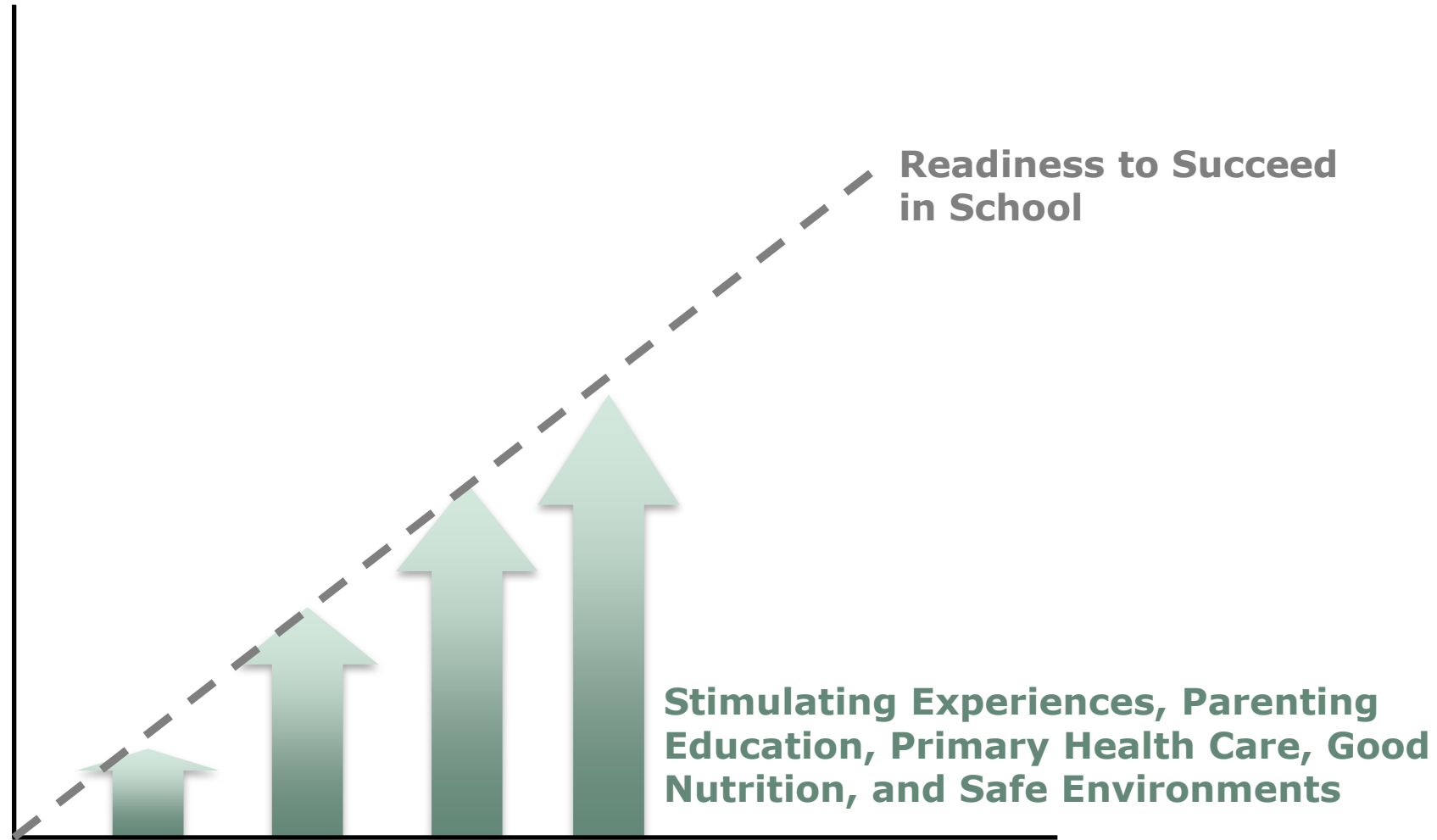
Toxic Stress Derails Healthy Development



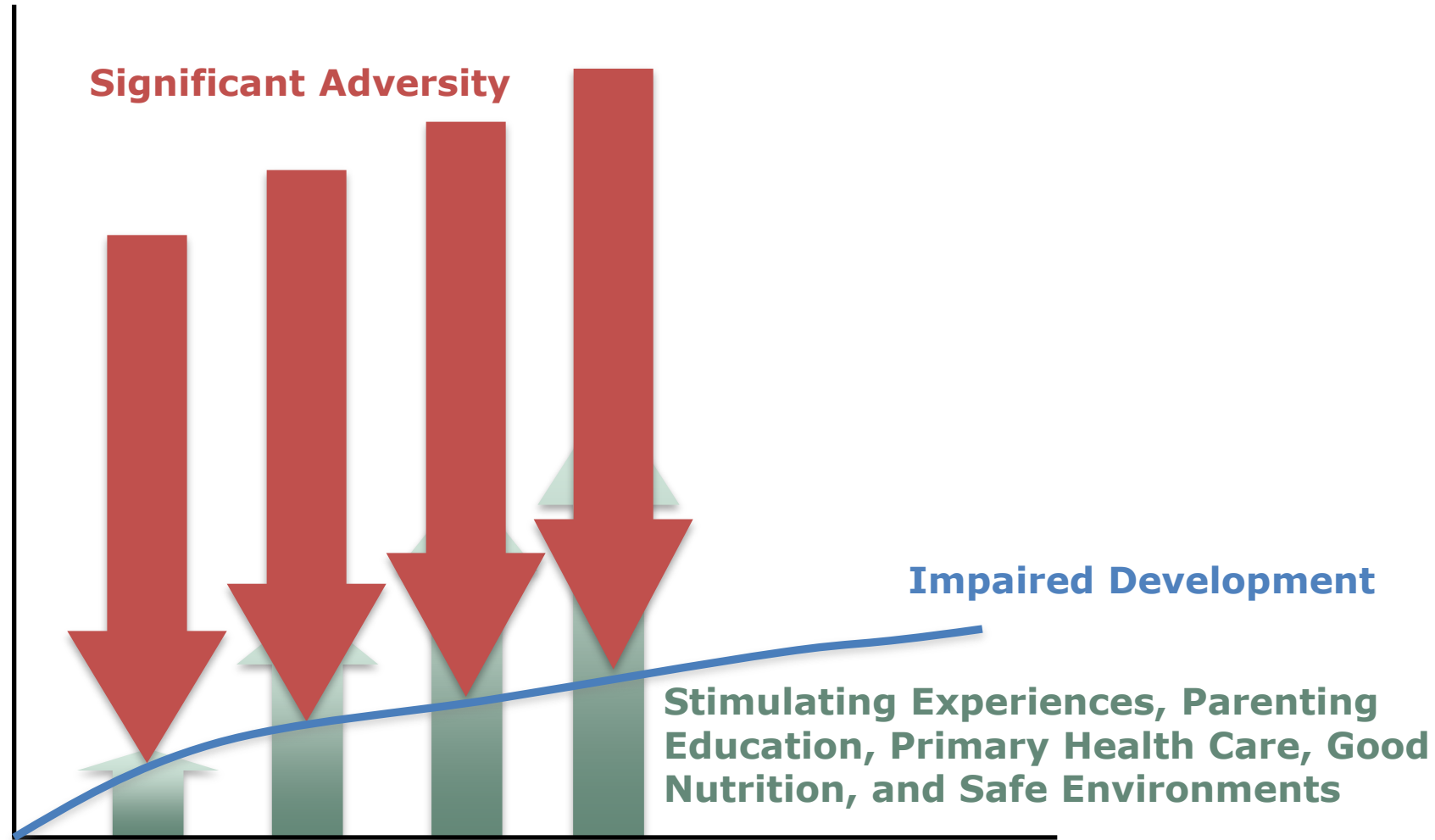
Watch this video:

http://developingchild.harvard.edu/resources/multimedia/videos/three_core_concepts/toxic_stress/

The Current Conceptual Framework Guiding Early Childhood Policy and Practice is Incomplete

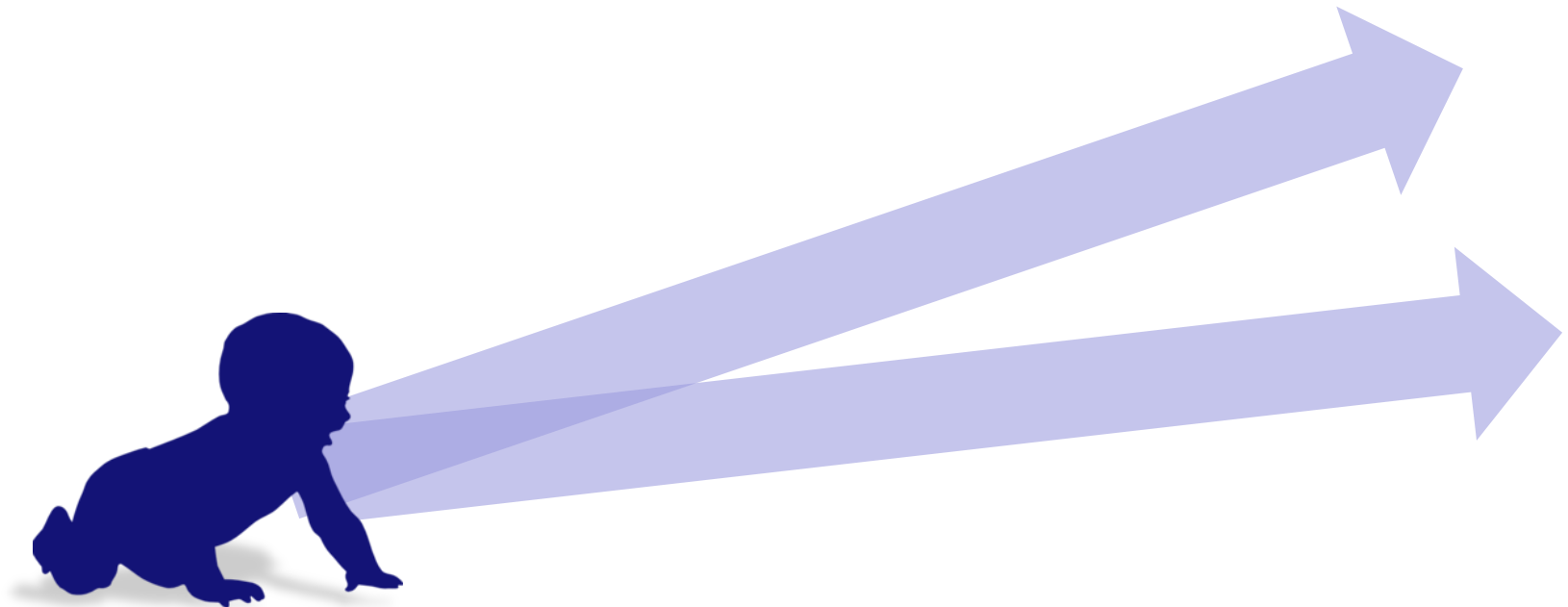


The Current Conceptual Framework Guiding Early Childhood Policy and Practice is Incomplete



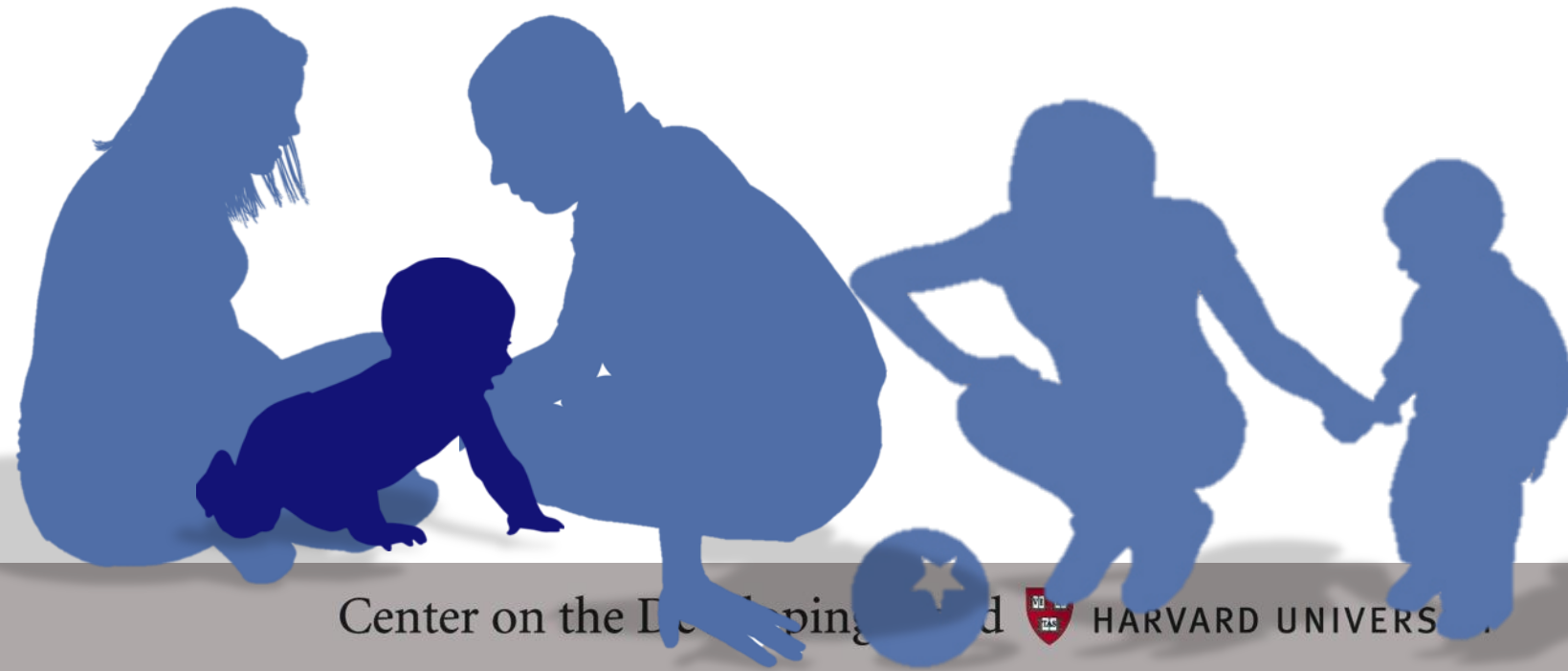
Using 21st Century Science to Change the Narrative for Policy and Practice Across Sectors

Early experiences affect **both** lifelong health **and** learning



Using 21st Century Science to Change the Narrative for Policy and Practice Across Sectors

Early experiences affect **both** lifelong health **and** learning
Healthy development requires **both** protection **and** enrichment

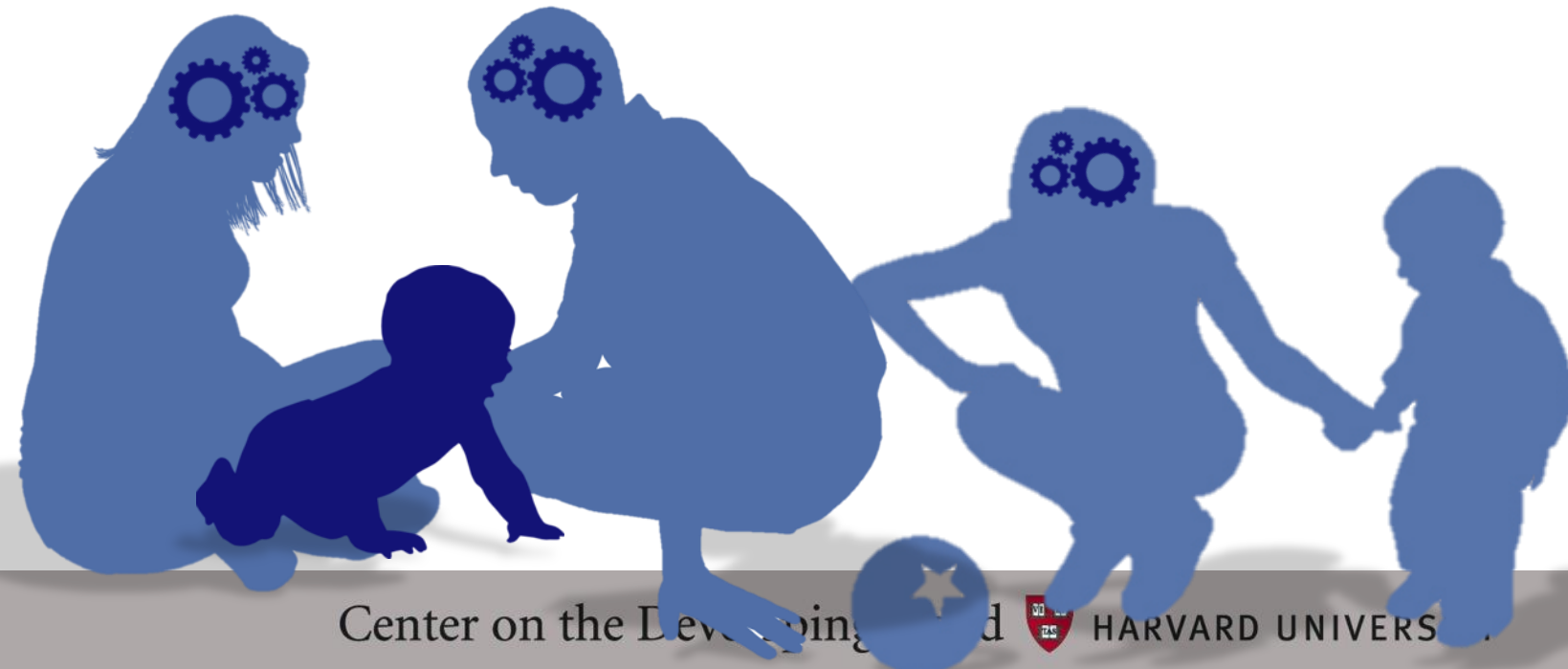


Generating Hypotheses to Guide the Design and Testing of New Intervention Strategies

Early experiences affect lifelong health *and* learning

Healthy development requires protection *and* enrichment

- 1 Protection, enrichment, and the development of resilience in young children facing adversity require capacity-building for their caregivers

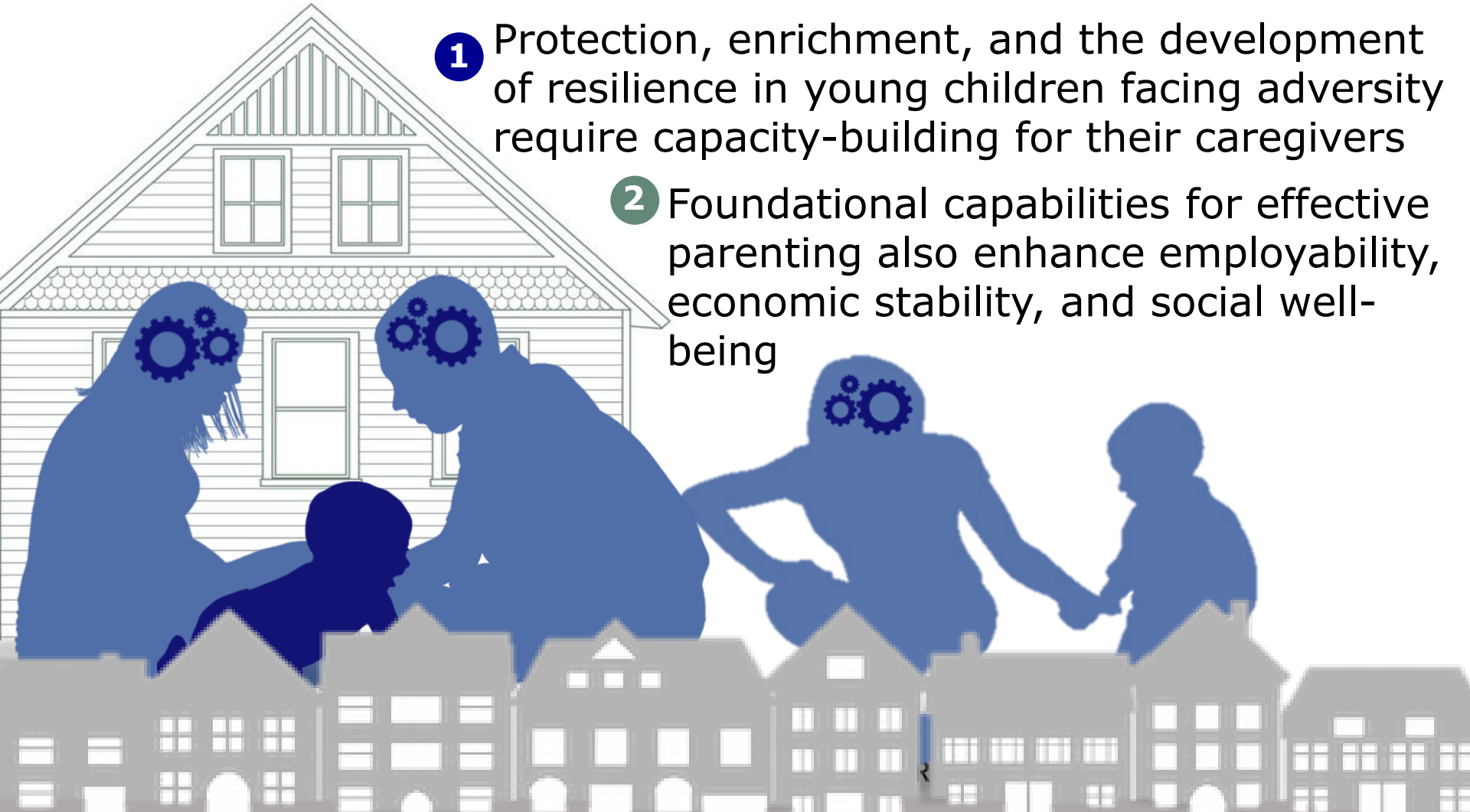


Generating Hypotheses to Guide the Design and Testing of New Intervention Strategies

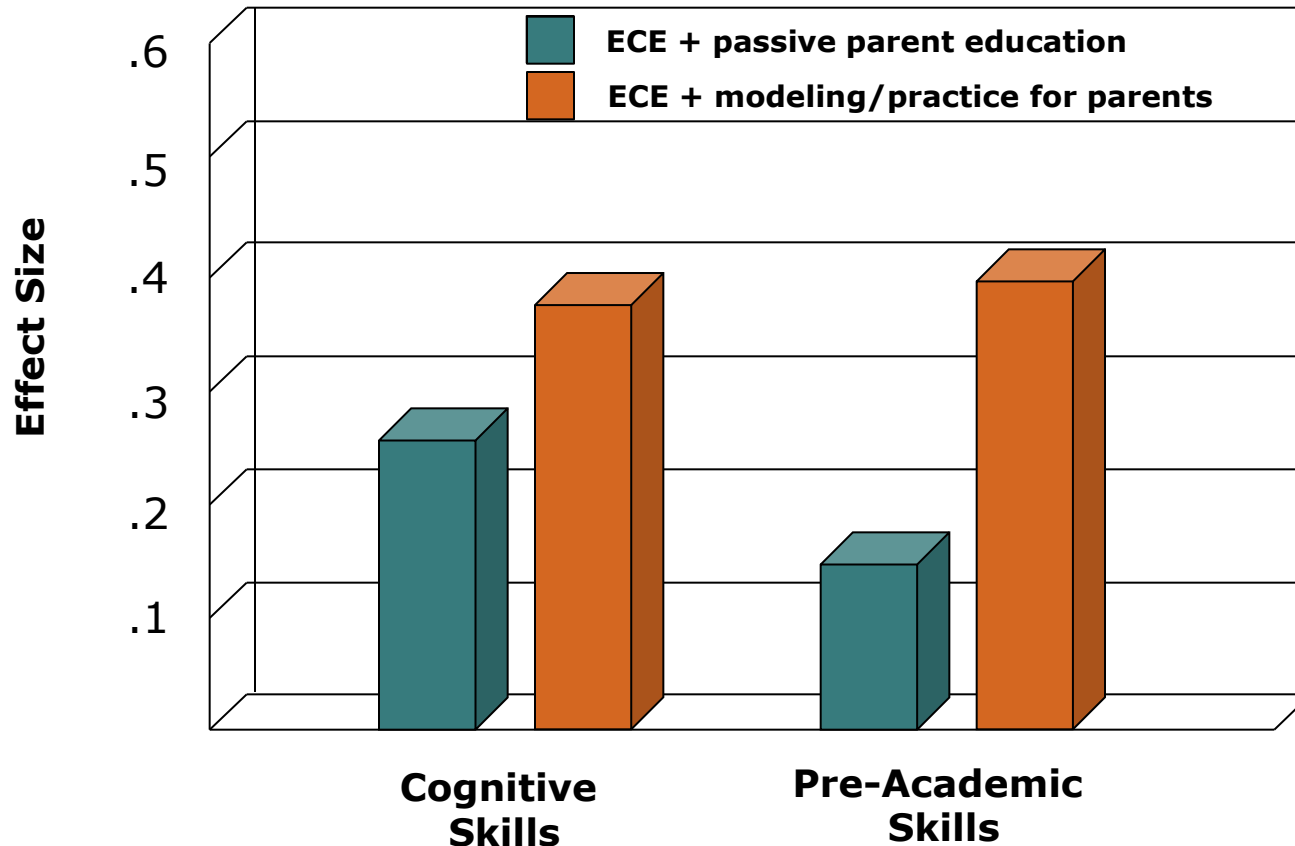
Early experiences affect lifelong health *and* learning

Healthy development requires protection *and* enrichment

- 1 Protection, enrichment, and the development of resilience in young children facing adversity require capacity-building for their caregivers
- 2 Foundational capabilities for effective parenting also enhance employability, economic stability, and social well-being



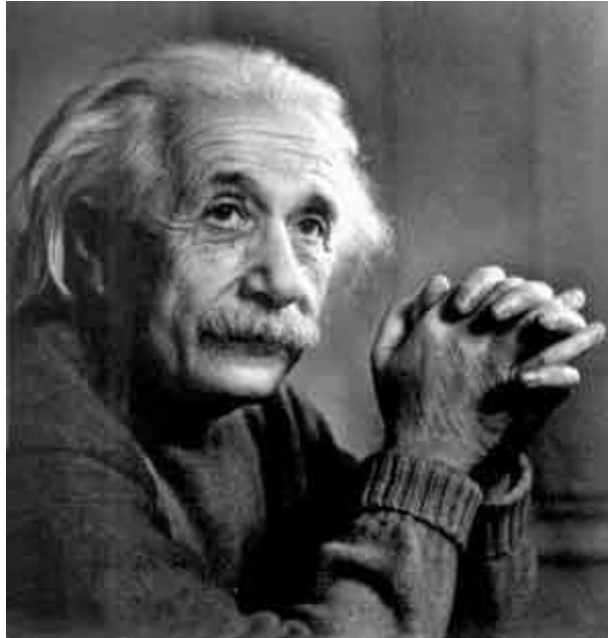
Analysis of Parent Involvement in Early Childhood Programs Conveys an Important Message



Average Impacts of 88 Early Childhood Education Programs (1960-2007)

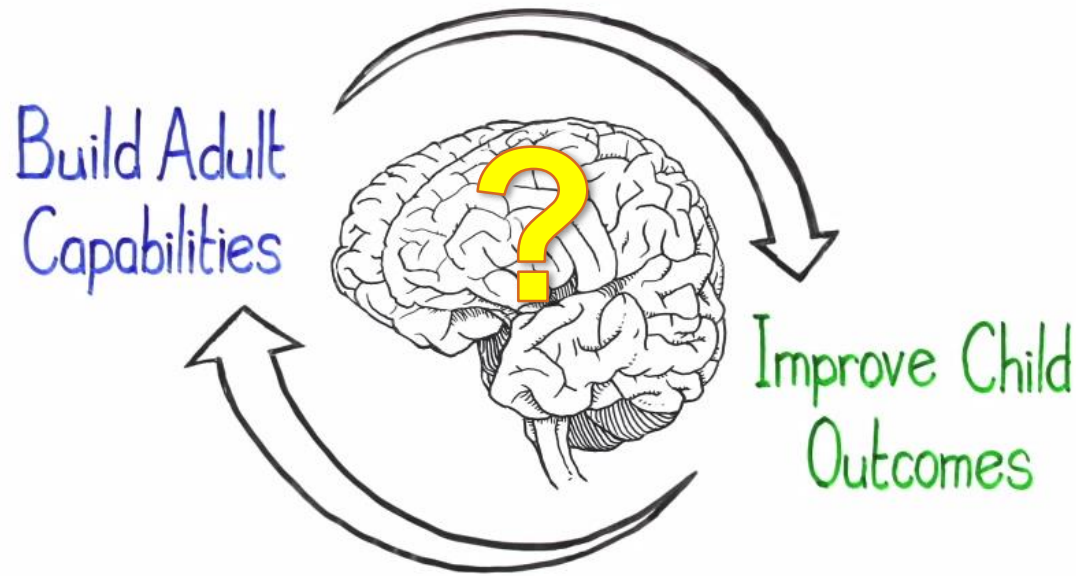
Source: Grindal, et al. (under review)

Albert Einstein Nailed the Problem



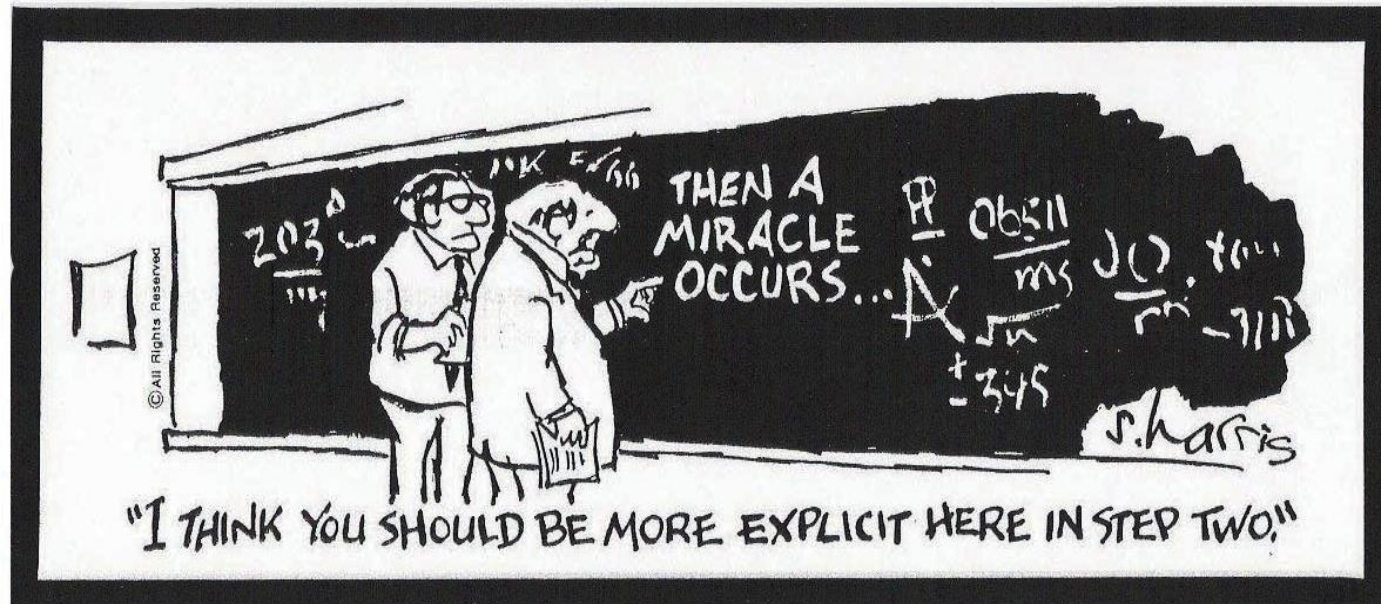
“If you always do what you always did,
you will always get what you always got.”

The Biology of Adversity Suggests a New Model for Intergenerational Investment



If we really want to achieve breakthrough outcomes for children experiencing toxic stress, then we have to transform the lives of the adults who care for them.

Moving Beyond “Why, What, and How” and Using 21st Century Science to Explore “What’s Next?”





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The collage displays several key sections of the Center on the Developing Child website:

- Home Page:** Features a sidebar with navigation links (Browse by Topic, Activities, Resources, Faculty & Partners, News & Events, About) and a main content area with a video player for "Building Adult Capabilities to Improve Outcomes" and a section for "Science of Early Childhood" with a brain scan image.
- InBrief: The Impact of Early Adversity on Children's Development:** A central screenshot showing a video player for "Toxic Stress Changes Brain Architecture" with a diagram comparing "Normal" brain development (typical neuron with many connections) to "Toxic Stress" (neuron damaged by toxic stress, fewer connections).
- Multimedia:** A sidebar with navigation links (Browse by Topic, About, Faculty & Partners, Initiatives, Library, Reports & Working Papers, Briefs, Multimedia, Articles & Books, Contact Us).
- Reports & Working Papers:** A section titled "The Foundations of Lifelong Health Are Built in Early Childhood" with a summary of essential findings and a download PDF link.
- Newsletter:** A section with a sign-up form and a link to view the archive of past newsletters.

www.developingchild.harvard.edu